

attention to the fact that since the inauguration of this process its product has been distinctly eclipsed by steels manufactured in several famous Sheffield works.

Mr. Woodworth's book has been written by an able man, thoroughly interested in his craft, and it is to be hoped that it will find its way into the hands of a large number of British artisans.

J. O. ARNOLD.

OUR BOOK SHELF.

Macedonian Folklore. By G. F. Abbott, M.A. Pp. xii + 372. (Cambridge: University Press, 1903.)

THIS somewhat dainty little volume on Macedonian folklore, with its blue and white binding, will be welcomed by many readers, first, because the print and paper are good, and next, because the work is pleasantly written, and every paragraph is of interest. The results collected in the work before us by Mr. G. F. Abbott, of Emmanuel College, Cambridge, are the fruits of a series of researches into the folklore of the Greek-speaking parts of Macedonia, carried on by the author under the auspices of the electors to the Prendergast studentship of the governing body of Emmanuel College, Cambridge, and there can be no doubt that the materials here gathered together amply justify the selection of Mr. Abbott for his mission by the powers that be.

The reader or student who is familiar with the sound and solid work of Prof. E. B. Tylor, and the wonderful volumes of his friendly rival, Mr. J. G. Frazer, will not expect to find in this monograph the vast knowledge and mature thought which are so characteristic of the works of these eminent scholars, but it is pleasant to see that the influence of both of them is visible in Mr. Abbott's treatise, and we therefore look forward to other works from his pen with confidence. "Macedonian Folklore" contains nineteen chapters, six appendices, and an index; the last-named section is very short, and we think it should have been made fuller. After a short description of the sources of the facts which he prints, and a narrative of some amusing personal experiences, Mr. Abbott proceeds to deal with the folklore of the Macedonian year, which he treats in four chapters. Many of the saws are familiar enough to us in other forms, but there are several auguries and prophecies about the weather which are worthy of note for comparative purposes.

The section on divination is of considerable interest, and it seems that the Macedonians divine by means of coffee, instead of by tea as Europeans in the west do. The expert will have no difficulty in tracing a connection between some of the divination practices here described with those of many nations, but there are many which have no parallels among other peoples, so far as we know, and these, of course, form one of the most valuable parts of Mr. Abbott's book.

The chapters on birth, marriage, and funeral rites are lengthy, but very interesting, and the numerous extracts which we have from the songs of the people enable us to judge of the accuracy of the deductions set forth in them. The original Greek is given, in all cases, with an English translation, and this plan is a handy one and one to be commended. We cannot refer to details, for want of space forbids, and we therefore pass on to mention the chapters on Alexander the Great and Philip in folk-tradition, to the series of pretty bird-legends which are printed on pp. 291-294, to notes on the game of morra, fire-ordeal, the perils of portraiture, &c., and to the collections of riddles, mystic poems, love-couplets, &c., which bring the book to an end. Mr. Abbott's contribution to the science of

Macedonian folklore is opportune, and the modesty of the work and the care with which it has been performed merit praise.

Practical Physics for Schools. I. Mensuration, Mechanics, and Hydrostatics. Pp. 72. II. Light and Heat. Pp. 79. By C. J. L. Wagstaff, M.A., and G. C. Bloomer, B.A. (Cambridge: W. Heffer and Sons, 1903.) Price 1s. 6d. each.

THE authors say in their preface that these notes have been used for the teaching of practical physics at the Bradford Grammar School during the last three years, and the presumption is that experience has proved their usefulness and suitability. An examination of the volumes, however, suggests that the notes have in practice probably been supplemented by judicious additions by the teachers, or the results of the instruction would have been less satisfactory. The volumes contain no illustrations to show pictorially the arrangements of the apparatus described; one page only seems to be devoted to the plotting of curves, and on this page there is by no means enough explanation to explain to a young student the method and meaning of such graphic representation; and, more than this, under the section Boyle's law, the pupil is instructed to plot a curve connecting P and $1/V$, and in another place to plot a curve connecting the square root of the length of a pendulum and the time of swing, though the only remarks on curve plotting, instead of preceding these instructions, follow in another experiment. In several places, too, the verbal instructions seem inadequate to the needs of beginners. In describing the screw gauge the authors content themselves by saying that the zero error must be ascertained carefully, and give no directions as to how this should be done. The account of the vernier is similarly too brief. To secure the best results in a physical laboratory the student should be in possession of directions explicit enough to avoid the waste of time caused by waiting for the master to arrive to clear up a difficulty, and these directions should be obtainable from the book or be given in a preliminary demonstration. Notwithstanding the remark of the authors that experimental work in sound is only suitable for a later stage, there are many experiments in this branch of physics that interest young people and are understood by them. On the whole, however, the course is comprehensive and generally in accordance with the experience of good laboratory practice.

Flora of the Upper Gangetic Plain and of Adjacent Siwalik and Subhimalayan Tracts. Vol. i., part i. By J. F. Duthie, B.A., F.L.S. Pp. xvii + 403. (Calcutta: Office of the Department of Government Printing, 1903.) Price 15s.

IT is only by a very liberal interpretation of the term that this book can be referred to as a *local* flora, seeing that it deals with an area of 196,000 square miles, which includes not only the North-West Provinces up to the Subhimalayan slopes, but extends southwards to the Vindhya Mountains, and thus takes in portions of some dependent States. But as a comparative term, when contrasted with Sir J. Hooker's "Flora of British India," the expression has been applied both to this flora and also to Dr. T. Cooke's "Flora of the Bombay Presidency." A very satisfactory feature of the book is the facility which is offered for obtaining information quickly and easily. A synopsis of the natural orders is given, arranged on principles similar to those which are so well known from Hooker's "Student's Flora," arrangement being based primarily on the characters of the ovary. For each order and genus full descriptions and determining keys are provided, and for the species references, synonyms, locality

and distribution are added. These, in conjunction with a glossary of terms, render the book available to everyone possessed of an elementary knowledge of botany. In addition to the descriptive text, Mr. Duthie has collected into the notes appended to the species a vast amount of information dealing with the identification and economic uses of the plants, both indigenous and cultivated. A perusal of the book not only serves to indicate how large a proportion of the Indian plants possess valuable properties, but also cannot fail to impress one with the comprehensive knowledge which has been acquired by the assiduous work of the author and other botanists in India who have occupied similar responsible positions. This part includes the orders Ranunculaceæ to Cornaceæ; the first volume will extend to the Campanulaceæ, and two volumes will complete the work.

A Laboratory Guide to Qualitative Analysis with the Blowpipe. By F. W. Martin, Ph.D. Pp. iv+47. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1903.) Price 2s. 10d.

THE author regards the restricted employment of the blowpipe in analysis as due to the lack of a convenient manual or work of reference, which this modest little volume of fifty pages is now intended to supply.

It may be questioned whether, in a well-equipped laboratory, the use of the blowpipe as a delicate instrument for qualitative analysis will supersede other methods. For the mineralogist, and especially for the mining prospector, the classic of Plattner-Richter, which has been translated into English by Cornwall, will always hold its place.

There is nothing in the present volume to call for special notice. The matter is very condensed, occasionally at the risk of becoming confused. This is a description of a coal gas flame:—"Its luminosity is due to superheated, separated carbon set free from acetylene, an easily decomposed gas, which is formed from other hydrocarbons composing the gas used as fuel by the heat of combustion in the outer envelope." One is accustomed to the American spelling of "luster," "vapor," &c., but the omission of the final e in "oxid," "sulfid," "chlorid," &c., if intentional (*oxide* also occurs), is un-English.

J. B. C.

Elementary Experimental Science. Physics. By W. T. Clough. *Chemistry.* By A. E. Dunstan, B.Sc. Pp. vi+239. (London: Methuen and Co., 1904.) Price 2s. 6d.

THE course of work provided in this little book is intended for young beginners who propose to present themselves for examinations of the standard of the University Junior Locals. The book aims at supplying the necessary general information, and also sufficiently explicit instructions for laboratory work. In the physics section 157 experiments are provided, and in chemistry there are 110, but a number of them are more suitable for lecture demonstrations than for laboratory exercises. A pupil who works through the book, performing the more important of the experiments given, cannot fail to obtain a fair knowledge of the fundamental principles of physical and chemical science.

Notes from a Lincolnshire Garden. By A. L. H. A. Pp. 93. (London: Elkin Mathews, 1903.) Price 2s. 6d. net.

THESE notes are chatty, interesting, and intelligent. The writer loves the garden and everything that happens in or near it. The book is an instance of the humanising effect of nature-study undertaken for the love of the subject. The little book may be recommended to all lovers of country gardens.

NO. 1780, VOL. 69]

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

Heating Effect of the Radium Emanation.

IN a letter to NATURE of November 5, Prof. Schuster has made some remarks on a letter published by us the week previously, containing a brief account of some experiments to show that the heating effect of radium is temporarily reduced by the removal of the emanation, and that the tube containing the emanation separated from the radium shows a considerable heating effect.

The difficulty felt by Prof. Schuster apparently arose from the fact that we included in the heating effect of the emanation not only that due to the emanation itself, but also that due to the secondary products to which the emanation gives rise. It was an oversight on our part to have omitted in the sentence "more than two-thirds of the heating effect is not due to the radium at all, but to the radio-active emanation which it produces from itself," the words "together with the secondary products to which the emanation gives rise." We were fully aware that the heating effect was in part due to the "excited activity" produced by the emanation. We specially mentioned the gradual decay of the heating effect of radium to a minimum in the course of a few hours, and the increase of the heating effect of the emanation tube during the same period. These effects are connected with the gradual decay and rise, respectively, of the excited activity produced by the radium emanation. The results would have little meaning if we believed the heating effect was due to the emanation alone, for, as Prof. Schuster quite correctly points out, the heating effect in such a case should at once drop to a minimum after removal of the emanation, and the heating effect of the tube containing the emanation should not at first increase.

On account of the rapid rise of the excited activity in a tube containing the radium emanation, the separation of the heating effect of the emanation from the complicated secondary changes which result from it is a difficult experimental problem.

Our letter was merely a preliminary announcement of the results of our experiments. It is not possible to discuss the consequences to be deduced from the experiments without entering into a detailed description of the measurements. We hope to publish shortly a full account of our work on the various heating effects.

McGill University, November 20.

E. RUTHERFORD.

H. T. BARNES.

The Pearl-Oyster Parasite in Ceylon.

MR. JAMES HORNELL, who is still in Ceylon carrying on the investigation of the pearl-oyster fisheries which I started in 1902, tells me in a letter just received that he has now succeeded in finding the final stage of the cestode larva which we found to be the nucleus of the best Ceylon pearls. We found this larva (a *Tetrarhynchus*), in the spring of 1902, in the pearl-oyster, and, later on, what we took to be its later stages in the file-fishes (*Balistes*) which feed upon the pearl-oysters, and we felt pretty certain (as I stated in the first part of my report, now published) that the adult would be found in Trygon or some other large Elasmobranch. Mr. Hornell writes from Trincomalee, November 16, as follows:—"Just a line to tell you that I have found the final host of *Tetrarhynchus unionifactor*.¹

"It occurs, as surmised, in one of the large rays—a Trygon, I believe, but I have no work on fishes, and cannot identify at present.

"There is, I believe, practically no doubt as to species, in the stomach of the ray being two *Balistes* entire, and apparently just devoured, and plenty of bones. In the folds

¹ The name we gave to this *Tetrarhynchus* larva in our notes and letters until it was ascertained whether the species was known or new.—W. A. H.